CLAIMS

1. Solid support (1) having a surface (4) for immobilizing oligonucleotides, characterized in that said surface (4) is the surface of a material chosen from among HfO_2, TiO_2, Ta_2O_5, ZrO_2 and a mixture containing at least one of these materials, said surface having undergone a treatment to make it hydrophilic.

2. Solid support according to claim 1, characterized in that the material is in the form of a layer (3) deposited on a substrate (2).

3. Solid support according to claim 2, characterized in that the layer (3) has a thickness of between a few nanometres and one micrometer.

4. Solid support according to either of claims 2 or 3, characterized in that the substrate (2) is a substrate chosen from among substrates in glass, plastic and semiconductor material.

5. Solid support according to claim 4, characterized in that the substrate (2) is in silicon.

6. Solid support according to any of claims 1 to 5, characterized in that said material is a mixture containing SiO_2.

7. Biochip characterized in that it comprises a solid support (1) for immobilizing oligonucleotides according to any of claims 1 to 6.

8. Method for producing a solid support (1) having a surface (4) for immobilizing oligonucleotides, the support (1) comprising a substrate (2) supporting a layer (3) of material whose free face forms said surface, characterized in that it comprises the following steps:

- providing said substrate (2),
- depositing on the substrate(2) a layer (3) of a material chosen from among HfO_2, TiO_2, Ta_2O_5, ZrO_2 and a mixture containing at least one of these materials,
- treating the free surface of said layer (3) to make it hydrophilic.

9. Method according to claim 8, characterized in that the deposition step consists of depositing a layer (3) of material having a thickness of between a few nanometres and one micrometer.

10. Method according to claim 8, characterized in that the substrate (2) providing step consists of providing a substrate chosen from among glass, plastic and semiconductor substrates.

11. Method according to claim 8, characterized in that the deposition step consists of depositing a material containing SiO_2.

12. Method according to claim 8, characterized in that the depositing step uses a deposition method chosen from among vacuum evaporation, ion beam sputtering, radio-frequency sputtering, magnetron sputtering, atom layer chemical vapour deposition (ALCVD) and sol-gel deposition.

13. Method according to claim 8, characterized in that the treatment step of the free surface of the deposited layer (3) consists of cleaning the layer with a base solution or an acid solution.

14. Method according to claim 8, characterized in that it comprises an additional step consisting of structuring the free surface of said layer (3).

15. Method according to claim 14, characterized in that the structuring step uses a technique chosen from among dry etching, wet etching and "lift-off".